

## DEVELOPMENT OF MULTIPLE EXTERNAL REPRESENTATIONS (MER) DIAGNOSTIC TEST TO DETERMINE THE PROFILE OF CONCEPT REPRESENTATION SKILLS

## PENGEMBANGAN TES DIAGNOSTIK MULTI REPRESENTASI EKSTERNAL (MRE) UNTUK MENGETAHUI PROFIL KEMAMPUAN REPRESENTASI KONSEP

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### Abstract

*Students' ability to understand various physics concepts has been an issue. To overcome this, the MER diagnostic test can be used as an alternative to investigate the students' skills in solving Uniformly Accelerated Linear Motion (GLBB) problems at Kristen Satya Wacana Senior High School. The MER diagnostic test aims to investigate what forms of representation students can provide and how well they can represent concepts in verbal, mathematical, and graphical formats. A total of 25 grade X students were selected as the sample. 15 essay question items were employed as the instrument for data collection. The results indicate that of all students, 64% can represent the concepts verbally and mathematically, 8% can represent verbally and graphically, and 28% can represent mathematically, verbally, and graphically.*

**Keywords:** diagnostic test, multiple external representations, concept representation skills

### Abstrak

*Permasalahan yang teridentifikasi ialah kemampuan siswa dalam memahami konsep fisika yang beragam. Untuk mengatasi masalah tersebut, tes diagnostik MRE dapat dijadikan salah satu alternatif untuk mengetahui kemampuan siswa dalam menyelesaikan soal-soal GLBB di SMA Kristen Satya Wacana. Tujuan tes diagnostik MRE ialah untuk melihat bentuk representasi apa saja yang dapat disajikan siswa dan bagaimana kemampuan siswa dalam merepresentasikan konsep dalam format verbal, matematis, dan grafik. Sampel penelitian adalah siswa kelas X yang berjumlah 25 orang. Data penelitian diperoleh dengan menggunakan instrumen berupa soal uraian sebanyak 15 butir soal. Hasil Penelitian menunjukkan bahwa sebesar 64% siswa mampu merepresentasikan konsep secara verbal dan matematis, sebesar 8% siswa mampu merepresentasikan konsep secara verbal dan grafik, dan sebesar 28% siswa mampu merepresentasikan konsep secara matematis, verbal, dan grafik.*

**Kata Kunci:** tes diagnostik, multi representasi eksternal, kemampuan representasi konsep